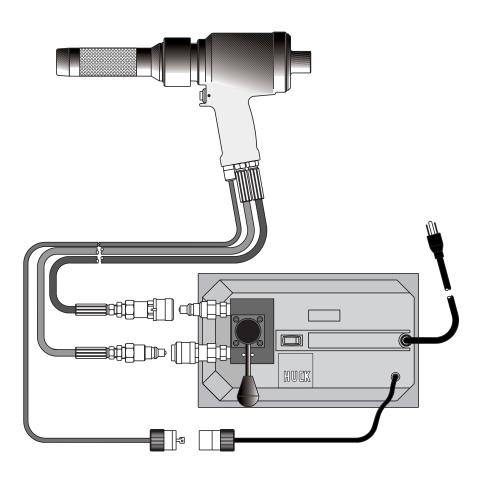
Alcoa Fastening Systems



INSTRUCTION MANUAL

HYDRAULIC INSTALLATION TOOLS

HUCK® SPINCUTTER TM COLLAR CUTTING KITS



Makers of Huck[®], Marson[®], Recoil[®] Brand Fasteners, Tools & Accessories



CONTENTS

SAFETY
SPECIFICATIONS
SERVICING THE EQUIPMENT
Good Service Practices
Preventive Maintenance
PRESSURE SETTING AND CONNECTING TOOL AND POWERIG8-9
Pressure Setting and Connecting to 964
Pressure Setting and Connecting to 940
ATTACHING NOSE ASSEMBLY11
OPERATION SEQUENCE
STICKER LOCATIONS
TROUBLESHOOTING14
Kits & Accessories

SAFETY

This instruction manual must be read with particular attention to the following safety guidelines, by any person servicing or operating this tool.

1. Safety Glossary



Product complies with requirements \mathbb{C} \mathbb{C} — set forth by the relevant European directives.



Read manual prior to using equipment.



Eye protection required while using this equipment.



Hearing protection required while using this equipment.



WARNINGS - Must be understood to avoid severe personal injury.

CAUTIONS - show conditions that will damage equipment and or structure.

Notes - are reminders of required procedures.

Bold, Italic type and underlining - emphasizes a specific instruction.

- 2. Huck equipment must be maintained in a safe working condition at all times and inspected on a regular basis for damage or wear. Any repair should be done by a qualified repairman trained on Huck procedures.
- 3. Repairman and Operator must read manual prior to using equipment and understand any Warning and Caution stickers/labels supplied with equipment before connecting equipment to any primary power supply. As applicable, each of the sections in this manual have specific safety and other information.
- See MSDS Specifications before servicing the tool. MSDS Specifications are available from your Huck representative or online at www.huck.com. Click on Installation Systems Division.

- When repairing or operating Huck installation equipment, always wear approved eye protection. Where applicable, refer to ANSI Z87.1 -1989
- Disconnect primary power source before performing maintenance on Huck equipment.
- If any equipment shows signs of damage, wear, or leakage, do not connect it to the primary power supply.
- Make sure proper power source is used at all
- Never remove any safety guards or pintail deflectors.
- 10. Never install a fastener in free air. Personal injury from fastener ejection may occur.
- **11.** When using an offset nose, always clear spent pintail out of nose assembly before installing the next fastener.
- 12. If there is a pinch point between trigger and work piece, use remote trigger. (Remote triggers are available for all tooling).
- 13. Do not abuse tool by dropping or using it as a hammer. Never use hydraulic or air lines as a handle. Reasonable care of installation tools by operators is an important factor in maintaining tool efficiency, eliminating downtime, and in preventing an accident which may cause severe personal injury.
- 14. Never place hands between nose assembly and work piece.
- **15.** Tools with ejector rods should never be cycled with out nose assembly installed.
- **16.** When two-piece lock bolts are being used, always make sure the collar orientation is correct. See fastener data sheet of correct positioning.

SPECIFICATIONS

Each kit comes with:

- 2624HS Hydraulic Installation Tool Assembly with hoses
- 964 Powerig[®] or 940 Powerig[®]
- Nose Assemblies described in the table below

Kit Part Number 940 Rig	Kit Part Number 964 Rig	Fastener Diameter	Installation Nose Asembly Part No.	SpinCutter Nose Assembly Part No.
HS16CCKIT940	HS16CCKIT	1/2"	99-7500	99-7500CC
HS20CCKIT940	HS20CCKIT	5/8" & 16mm	99-7501	99-7501CC
HS24CCKIT940	HS24CCKIT	3/4"	99-7503	99-7503CC
N/A	MHS12CCKIT	12mm	99-7510	99-7510CC
MHS14CCKIT940	MHS14CCKIT	14mm	99-7511	99-7511CC
MHS20CCKIT940	MHS20CCKIT	20mm	99-7512	99-7512CC

2624HS Specifications

• **Stroke:** 1.687in • **Weight:** 24 lbs

• Capacity: 30,356 lbs @ 6,500 psi

For additional information on the 2624HS Tool or the 964 Powerig, please refer to the individual manuals supplied with the equipment:

2624HS Manual part no. HK1052

964 Powerig Manual part no. HK1053

940 Powerig Manual part no. HK496

Nose Assemblies - See Drawing included with Nose Assembly







SERVICING THE EQUIPMENT

GOOD SERVICE PRACTICES

1. Use Huck POWERIG® Hydraulic Unit, or equivalent, which has been prepared for operation per applicable *instruction manual*. Check PULL pressure and, if required, adjust to pressures given in **CONNECTING TOOL** TO POWERIG section of this manual.



WARNING - Proper PULL pressure is important for proper function of Installation Tools. Severe personal injury or damage to equipment may occur without correct pressures. Huck Pressure Gauge P/N T-10280 (old style) or the new T124833 is now available for checking these pressures using instructions furnished with the gauge and in applicable POWERIG® Hydraulic Unit instruction manuals. See Specifications.



WARNING - Be sure to connect tool hoses to hydraulic unit BEFORE connecting tool electrical switch cord to unit. Hoses and switch must be connected in this order and disconnected in the reverse order to prevent possible severe personal injury.

CAUTION: Keep dirt and other harmful material out of hydraulic system, which includes tool, hoses, couplers and POWERIG Hydraulic Unit. Parts must be kept away from unclean work surfaces. Dirt in hydraulic system causes valve failure in hydraulic unit.

Individual parts must be handled carefully and examined for damage or wear. Replace parts where required. Always replace O-rings and Back-up Rings when tool is disassembled for any reason. See applicable Service Kit.



WARNING: Inspect tool for damage or wear before each use. Do not operate if damaged or worn, as severe personal injury may occur

- The efficiency and life of your tool depends on proper maintenance. Using the manual will help give a clear understanding of the tool and basic maintenance procedures. Please read this section completely before proceeding with maintenance and repair. Use proper hand tools in a clean and well-lighted area. Only standard hand tools are required in most cases. Where a special tool is required, the description and part number are given.
- While clamping tool or parts in a vise, and when parts require force, use suitable soft materials to cushion impact. For example, using a half-inch brass drift, wood block and vise with soft jaws greatly reduces possibility of damaging tool. Remove components in a straight line without bending, cocking or undue force. Reassemble tool with the same care.
- Consult <u>Troubleshooting</u> section of this manual if a malfunction occurs or if fasteners do not pass inspection.

Sealants, Lubricants, Hydraulic Fluid & Service Kits

- Rub SLIC-TITE TEFLON thread compound, or equivalent, on pipe threads to prevent leaks and for ease of assembly. CAUTION: Do not use TEFLON tape on pipe threads. Particles of shredded tape cause hydraulic unit valve failure. (SLIC-TITE in stick form, 503237).
- Smear LUBRIPLATE 130AA, or equivalent, on O-rings and mating surfaces to prevent damaging O-rings on rough or sharp surfaces. Also, increases ease of assembly. (LUBRIPLATE in a tube, 502723).
- Each Service Kit contains perishable parts for your specific tool. As foreseeable use may indicate, keep extra kits (O-rings, Back-up Rings, other standard items) and tool parts in stock. When stock is depleted, you can get kit items from any regular retailer of these items. See kit parts list for: O-ring size (AS568- number); material; durometer. For kit parts lists and related information, see General Notes.







SERVICING THE EQUIPMENT

PREVENTIVE MAINTENANCE

System Inspection

Operating efficiency of the tool is directly related to the performance of the complete system, including the tool with nose assembly, hydraulic hoses, trigger switch and control cord, and POWERIG Hydraulic Unit. Therefore, an effective preventive maintenance program includes scheduled inspections of the system to detect and correct minor troubles.

- Inspect tool and nose assembly for external damage.
- Verify that hydraulic hose fittings, couplings, and electrical connections are secure.
- Inspect hydraulic hoses for damage and deterioration. Do not use hoses to carry tool. Replace hoses if damaged.
- Observe tool, hoses, and hydraulic unit during operation to detect abnormal heating, leaks, or vibration.

POWERIG Hydraulic Unit Maintenance

Refer to the applicable POWERIG instruction manual.

<u>Tool Maintenance</u> Whenever disassembled and also at regular intervals (depending on severity and length of use), replace all seals, wipers, and back-up rings in tool. Service Kits, hoses, and extra parts should be kept in stock. Inspect cylinder bore, pistons, and piston rods for scored surfaces and excessive wear or damage. Replace as necessary. Always replace seals, wipers, and back-up rings whenever the tool is disassembled for any reason.

Nose Assembly Maintenance

Clean nose assembly often. Dip in mineral spirits or similar solvent to clean jaws and wash away metal chips and debris. At regular intervals, as experience shows, disassemble nose and use a sharp "pick" to remove imbedded particles from grooves of jaws.



WARNING: Be sure to disconnect tool's electric control trigger system from Hydraulic Unit before disconnecting tool's hoses from unit. Before any maintenance is done, DISCON-NECT IN THIS ORDER (RECONNECT IN THE OPPOSITE ORDER) to avoid possible severe personal injury.







PRESSURE SETTINGS AND CONNECTING TOOL TO POWERIG

964

The 964 Powerig come from the factory set at maximum pull pressure to cover all HuckSpin installation and cutting of the fastener. Please pay close attention to step 4 on page 12 of Operation Sequence to ensure you do not strip pins.

Listed below are the optional steps if 127444 or equivalent gage is used. Note, if optional pressure gage is used, refer to Figure 3a, Table A on page 10 for correct pull pressures for the fastener diameter you are using. **Note: Return pressures are not used with the 964 Powerig.**

Before attempting to set pressures, prepare 2624HS Tool per instruction manual HK1052 (supplied with Tool), and disconnect Powerig hydraulic unit from electrical power supply.

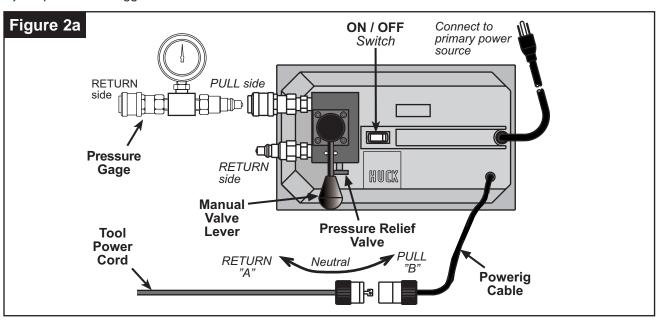
Optional Pressure Setting using 127444

- Shift manual Valve Lever to neutral (center) position. (Figure 3a)
 - 2. Connect Tool Power Cord to Powerig Cable.
- Connect Gage to PULL side Hydraulic Connector on Powerig.
- 4. Connect Powerig to primary power source.
- 5. Turn Powerig switch to ON.
- Set PULL pressure for operation based on fastener size. NOTE: To identify proper pressure settings, refer to Figure 3a, Table A.

To Set PULL pressure:

- a.) Switch manual Valve Lever to PULL ("B") position.
- b.) Depress Tool Trigger.

- c.) Read pressure on gage. This reading indicates the PULL pressure.
- d.) Set appropriate PULL pressure, based on fastener size, by gradually turning the pressure Relief Valve under the Valve Lever (Figure 3a) until gage reads the desired pressure setting.
- **e.)** Once the desired PULL pressure is correctly set, release Tool Trigger.
- 7. Shift manual Valve Lever to neutral position.
- 8. Turn Powerig switch to OFF.
- 9. Connect Tool Male and Female Hydraulic Disconnects to Powerig.
- 10. Plug Tool Power Cord to Powerig Cable.
- 11. Plug Powerig in to primary power source.
- 12. Turn Powerig switch to ON.
- 13. Switch manual Valve Lever to PULL ("B") position, depress trigger and let Tool cycle. After it has reached maximum stroke, switch manual Valve Lever to RETURN ("A") position, let Tool return to full forward position, and release Trigger. NOTE: Tool MUST be in FULL-FORWARD POSITION prior to installing Nose Assembly.
- 14. Attach Nose Assembly to Tool. See <u>Attaching Nose Assembly</u> section of this manual.



940 Pressure Setting Procedure:

Before attempting to set pressures, prepare 2624HS Tool per instruction manual HK1052 (supplied with Tool), and disconnect Powerig hydraulic unit from electrical power supply. NOTE: Gage 127444, supplied with kit, or optional gage T124833, or equivalent must be used to ensure correct pressure settings.

- 1. Connect tool's power cord to Electrical Enclosure of Powerig.
- 2. Connect Powerig to primary power source.
- 3. Set PULL and RETURN pressures for operation based on fastener size. NOTE: To identify proper pressure settings. refer to Figure 3a, Table A.

To Set PULL pressure:

a). 127444 Gage: Connect Gage Fitting to PULL side Connector on Powerig.

T124833 Gage: Connect Gage Fittings to PULL and RETURN side Connectors on Powerig.

b.) 127444 Gage: Depress Tool Trigger and, once Powerig is activated read pressure on gage. This reading indicates the PULL pressure.

T124833 Gage: Depress Tool Trigger and, once Powerig is activated, close Gage Valve Handle until fully closed. Read pressure on gage. This reading indicates the PULL pressure.

- c.) Set appropriate PULL pressure, based on fastener size, by gradually turning the High Pressure Relief Valve on the base of the Powerig (Figure 2b) until gage reads the desired pressure setting.
- d.) Once the desired PULL pressure is correctly set, release Tool Trigger.

To Set RETURN pressure:

e). 127444 Gage: Connect Gage Fitting to Return side

ger in the released position, watch the Gage while slowly closing Gage Valve Handle until Powerig shuts off. At the point that the Powerig shuts off, the reading on the gage indicates the RETURN pressure setting.

- g.) If this setting is correct, proceed to Step 4. NOTE: If the pressure is lower or higher than the desired setting, gradually adjust the RETURN pressure by turning the nut at the end of the Pressure Switch Assembly (Figure 2a), then repeat step 3f. Do this until the correct setting is achieved.
- 4. Disconnect Powerig from primary power source.
- 5. Remove pressure setting gage.

Pressure Switch

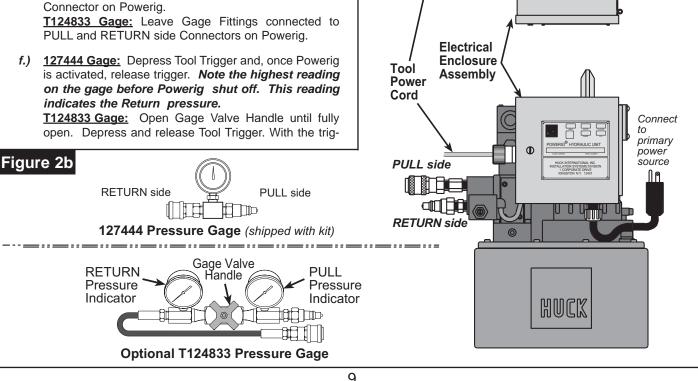
Assembly

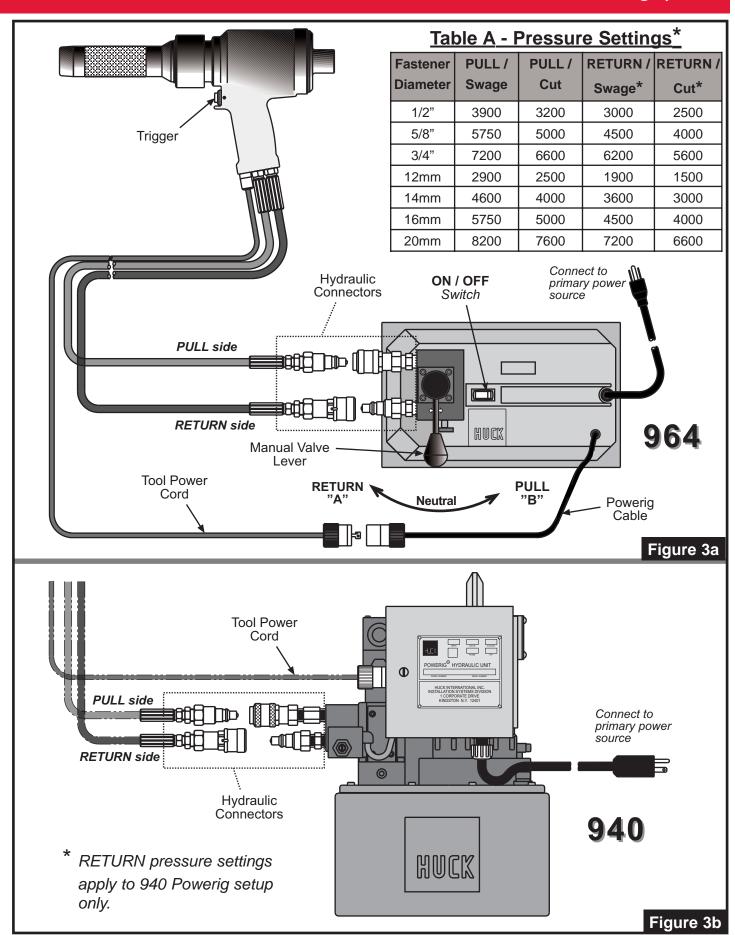
Nut

- 6. Attach tool hydraulic fittings to Powerig, and plug rig back in to primary power source.
- 7. Cycle Tool and, after it has reached maximum stroke, depress Trigger and let Tool return to full forward position. NOTE: Tool MUST be in FULL-FORWARD POSITION prior to installing Nose Assembly.
- 8. Attach Nose Assembly to Tool. See ATTACHING NOSE ASSEMBLY section of this manual.

High Pressure

Relief Valve





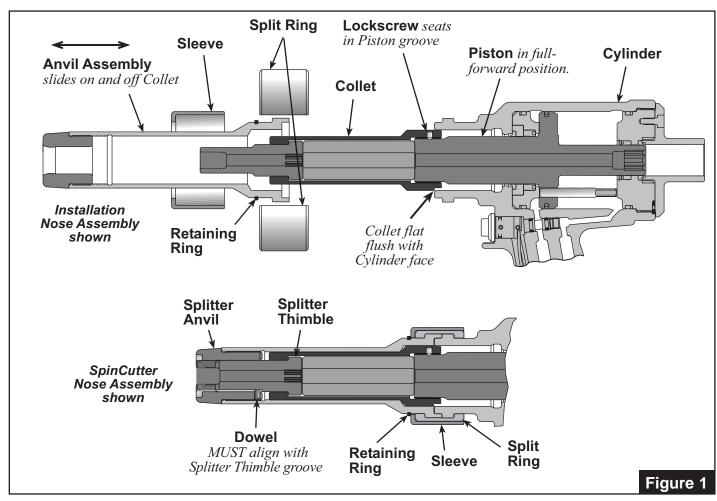




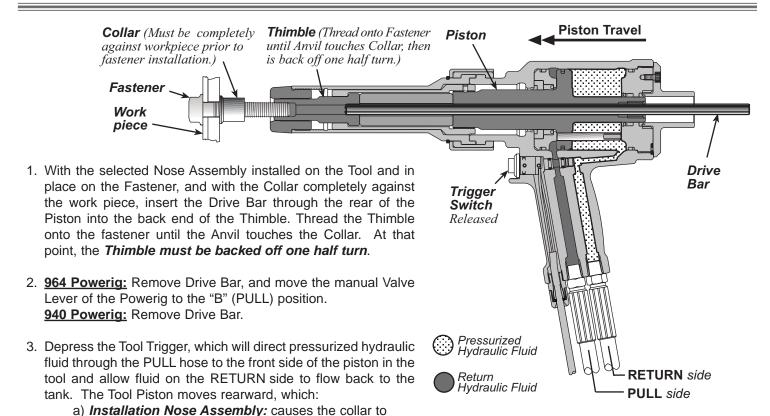


ATTACHING NOSE ASSEMBLY

- Prepare 2624HS Tool per instruction manual HK1052. Disconnect Powerig hydraulic unit from electrical power supply.
- 2. Remove Retaining Ring from Nose Assembly Anvil, and slide Anvil Assembly off of Collet. (Figure 1)
- 3. Remove Sleeve and Split Ring from Tool.
- 4. With Tool's Piston in the fully forward position, slowly screw Collet into Piston. Watch small flat section of Collet, and screw until the top of the flat just disappears under the edge of the Tool Cylinder. Once the flat is at least flush with the edge of the Cylinder, continue to screw Collet in approximately one quarter turn until the Lockscrew of the Collet meets with one of the four grooves in the Piston. Secure Lockscrew. CAUTION: Check position of Collet flat at regular intervals to prevent Nose Assembly and/or Tool damage.
- Slide Anvil Assembly over Collet, all the way to Tool. NOTE: When assembling the SpinCutter Nose Assembly, the blades of the inner part of the Anvil and the Splitter Anvil Dowel MUST align with the grooves of the Splitter Thimble.
- Place Split Ring over Anvil and front end of Cylinder. Push Anvil into Tool to assist in seating Split Ring.
- 7. Slide Sleeve over Split Ring and install Retaining Ring on Anvil.
- 8. Reconnect Powerig to power supply.



OPERATION SEQUENCE



4. When the tool comes forward and bottoms on the collar, as soon as it stops moving, then:

964 Powerig: Release the Tool Trigger, and move the manual Valve Lever of the Powerig to the "A" (RETURN) position. The hydraulic fluid is directed to the RETURN side, the Tool Piston moves forward, pushing the Nose Assembly off the Fastener.

940 Powerig: Release the

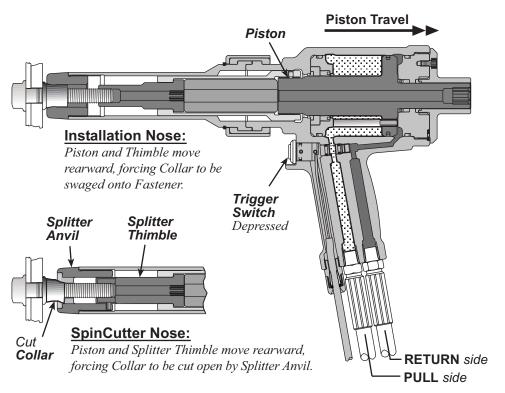
be swaged into the Anvil cavity, or

b) **SpinCutter Nose Assembly:** forces the Splitter Anvil Assembly into the swaged collar, cutting it.

Re-insert the Drive Bar into the Thimble, and unscrew the Thimble from the fastener.

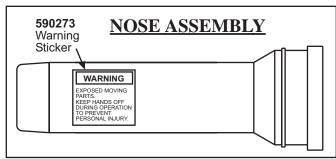
Tool Trigger.

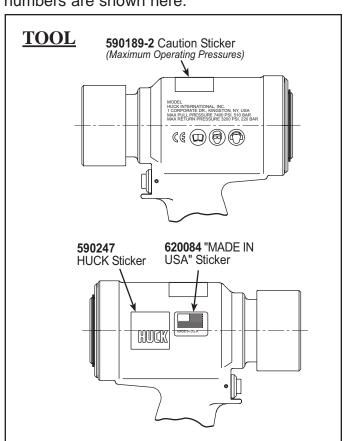
The sequence is now complete.

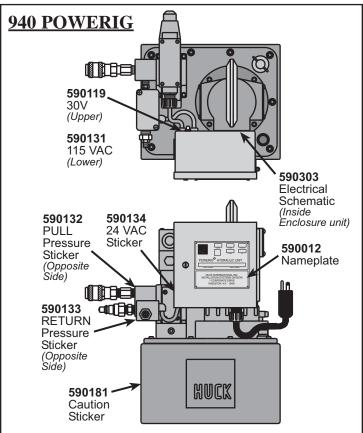


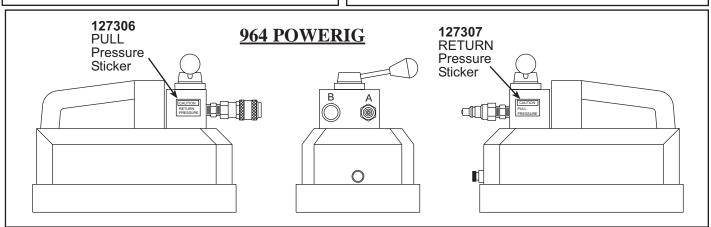
STICKER LOCATIONS

The equipment supplied in your Spincutter Kit all comes labeled with important stickers, which contain safety and pressure settings information. It is necessary that these stickers remain on the equipment and are easily read. If stickers become damaged or worn, or if they have been removed from the equipment, they must be replaced. The part numbers are shown here.









TROUBLESHOOTING

Always check the simplest possible cause of a malfunction first (example: a loose or disconnected trigger line). Then proceed logically and eliminate each possible cause until the defect is found. Where possible, substitute known good parts for suspected defective parts. Use the following steps as an aid in troubleshooting.

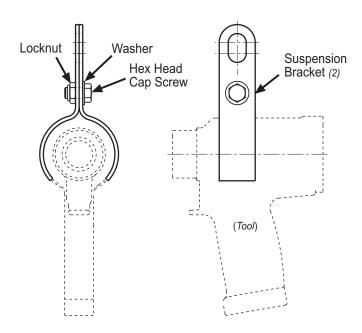
- 1. Tool fails to operate when trigger is pressed.
 - a. Inoperative POWERIG® Hydraulic Unit. See applicable instruction manual.
 - b. Loose electrical connections.
 - c. Damaged trigger assembly.
 - d. Loose or faulty hose coupling.
- 2. Tool operates in reverse.
 - Reversed hose connections between hydraulic unit and tool.
- 3. Tool leaks hydraulic fluid.
 - a. Defective tool O-rings or loose connections at tool.
- 4. Hydraulic couplers leak fluid.
 - a. Damaged or worn O-rings in Coupler Body Coupler
- 5. Hydraulic fluid overheats.
 - a. Unit not operating properly. See units manual.
 - b. Unit running in reverse (918; 918-5 only). See unit's manual.
- Tool operates erratically and fails to install fastener properly.
 - a. Low or erratic hydraulic pressure. Air in system.
 - b. Damaged or worn Piston O-ring in tool.
 - c. Excessive wear on sliding surfaces of tool parts.
- Pull grooves on fastener pintail stripped during PULL stroke.
 - a. Thimble is not threaded on far enough.
 - b. Incorrect fastener grip.
 - c. Worn or damaged Thimble.
 - d. Metal particles in Thimble.
 - e. Excessive sheet gap.
- 8. Collar of fastener not completely swaged.
 - a. Improper pressure setting. See Table A on page 8.
 - b. Scored anvil.
- 9. Tool "hangs up" on swaged collar of fastener.
 - a. Nose assembly not installed correctly.

KITS AND ACCESSORIES

Service Kit: 2624HSKIT

Suspension Bracket Assembly: 127400-2624

Enables user to install/cut fasteners with increased ergonomic flexibility. Bracket Assembly the Bracket and Hardware as shown below.



LIMITED WARRANTIES

Tooling Warranty: Huck warrants that tooling and other items (excluding fasteners, and hereinafter referred as "other items") manufactured by Huck shall be free from defects in workmanship and materials for a period of ninety (90) days from the date of original purchase.

Warranty on "non standard or custom manufactured products": With regard to non-standard products or custom manufactured products to customer's specifications, Huck warrants for a period of ninety (90) days from the date of purchase that such products shall meet Buyer's specifications, be free of defects in workmanship and materials. Such warranty shall not be effective with respect to non-standard or custom products manufactured using buyer-supplied molds, material, tooling and fixtures that are not in good condition or repair and suitable for their intended purpose.

THERE ARE NO WARRANTIES WHICH EXTEND BEYOND THE DESCRIPTION ON THE FACE HEREOF. HUCK MAKES NO OTHER WARRANTIES AND EXPRESSLY DISCLAIMS ANY OTHER WARRANTIES, INCLUDING IMPLIED WARRANTIES AS TO MERCHANTABILITY OR AS TO THE FITNESS OF THE TOOLING, OTHER ITEMS, NONSTANDARD OR CUSTOM MANUFACTURED PRODUCTS FOR ANY PARTICULAR PURPOSE AND HUCK SHALL NOT BE LIABLE FOR ANY LOSS OR DAMAGE, DIRECTLY OR INDIRECTLY, ARISING FROM THE USE OF SUCH TOOLING, OTHER ITEMS, NONSTANDARD OR CUSTOM MANUFACTURED PRODUCTS OR BREACH OF WARRANTY OR FOR ANY CLAIM FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES.

Huck's sole liability and Buyer's exclusive remedy for any breach of warranty shall be limited, at Huck's option, to replacement or repair, at FOB Huck's plant, of Huck manufactured tooling, other items, nonstandard or custom products found to be defective in specifications, workmanship and materials not otherwise the direct or indirect cause of Buyer supplied molds, material, tooling or fixtures. Buyer shall give Huck written notice of claims for defects within the ninety (90) day warranty period for tooling, other items, nonstandard or custom products described above and Huck shall inspect products for which such claim is made.

Tooling, Part(s) and Other Items not manufactured by Huck.

HUCK MAKES NO WARRANTY WITH RESPECT TO THE TOOLING, PART(S) OR OTHER ITEMS MANUFACTURED BY THIRD PARTIES. HUCK EXPRESSLY DISCLAIMS ANY WARRANTY EXPRESSED OR IMPLIED, AS TO THE CONDITION, DESIGN, OPERATION, MER-

CHANTABILITY OR FITNESS FOR USE OF ANY TOOL, PART(S), OR OTHER ITEMS THEREOF NOT MANUFACTURED BY HUCK. HUCK SHALL NOT BE LIABLE FOR ANY LOSS OR DAMAGE, DIRECTLY OR INDIRECTLY, ARISING FROM THE USE OF SUCH TOOLING, PART(S) OR OTHER ITEMS OR BREACH OF WARRANTY OR FOR ANY CLAIM FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES.

The only warranties made with respect to such tool, part(s) or other items thereof are those made by the manufacturer thereof and Huck agrees to cooperate with Buyer in enforcing such warranties when such action is necessary.

Huck shall not be liable for any loss or damage resulting from delays or nonfulfillment of orders owing to strikes, fires, accidents, transportation companies or for any reason or reasons beyond the control of the Huck or its suppliers.

Huck Installation Equipment

Huck International, Inc. reserves the right to make changes in specifications and design and to discontinue models without notice.

Huck Installation Equipment should be serviced by trained service technicians only.

Always give the Serial Number of the equipment when corresponding or ordering service parts.

Complete repair facilities are maintained by Huck International, Inc. Please contact one of the offices listed below.

Eastern

One Corporate Drive Kingston, New York 12401-0250 Telephone (845) 331-7300 FAX (845) 334-7333

Canada

6150 Kennedy Road Unit 10, Mississauga, Ontario, L5T2J4, Canada.

Telephone (905) 564-4825 FAX (905) 564-1963

Outside USA and Canada

Contact your nearest Huck International Office, see back cover.

In addition to the above repair facilities, there are Authorized Tool Service Centers (ATSC's) located throughout the United States. These service centers offer repair services, spare parts, Service Parts Kits, Service Tools Kits and Nose Assemblies. Please contact your Huck Representative or the nearest Huck office listed on the back cover for the ATSC in your area.



For the Long Haul™

A Global Organization

Alcoa Fastening Systems (AFS) maintains company offices throughout the United States and Canada, with subsidiary offices in many other countries. Authorized AFS distributors are also located in many of the world's

industrial and Aerspace centers, where they provide a ready source of AFS fasteners, installation tools, tool parts, and application assistance.

Alcoa Fastening Systems world-wide locations:

Americas

Alcoa Fastening Systems Aerospace Products Tucson Operations

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Alcoa Fastening Systems Aerospace Products Carson Operations

PO Box 5268 900 Watson Center Rd. Carson, CA 90749 800-421-1459 310-830-8200 FAX: 310-830-1436

Alcoa Fastening Systems Commercial Products Waco Operations

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Alcoa **Fastening Systems**



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One Great ConnectionSM

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